

# NGA **PATHFINDER**

The Geospatial Intelligence Magazine

MAY - JUNE 2004

► **IMAGINE THE  
POWER OF GEOINT**

- **Showing the Way: the NSG Statement of Strategic Intent**
- **The Next Big Ideas: Multi-INT and Horizontal Integration**
- **NGA Teams in Iraq: Meeting Many Needs**



NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY  
*Know the Earth ... Show the Way*



NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY

# PATHFINDER

MAY - JUNE 2004

Volume 2, Issue 1

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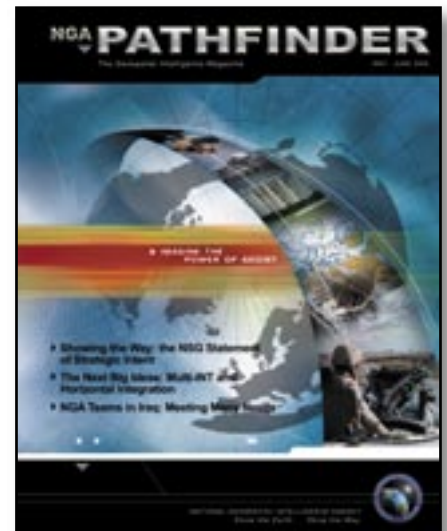


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### On the Cover

Capturing this month's theme - the power of GEOINT - the cover shows a band around the Earth that represents geospatial intelligence. The frames represent GEOINT's increasingly complex sources of data (both satellite-based and airborne), tailored products of imagery and geospatial data, and customers (from the White House to the soldier in the field.)



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### Getting Published

All members of the geospatial intelligence community are welcome to submit articles of community-wide interest. Articles are edited for style, content and length. The copy deadline is the last Friday of the second month before publication. For details on submitting articles, e-mail the Pathfinder. Our address is [pathfinder@nga.mil](mailto:pathfinder@nga.mil)

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## NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY

May 21, 2004

Dear *Pathfinder* Readers,

Just as NGA is continuing to evolve, so is **YOUR** Agency's magazine. You will see some changes over the next several issues and into 2005. Starting with this issue, the publication will lay out, in everyday terms and language, NGA's mission, goals, and vision. It will discuss what the Agency is doing today and what it will be doing in the future. Each issue will focus on one theme, viewed from various perspectives across the Agency, and address **YOUR** role in NGA's transformation.

This issue of *Pathfinder* highlights geospatial intelligence (GEOINT) as a powerful new analytic discipline - the product of increasingly complex sources which, together, are greater than the sum of the parts. GEOINT is emerging as the most valuable tool for envisioning and predicting activity around the world. It serves everyone - from the White House to the pilothouse, from the Situation Room to the ready room.

NGA's Director, retired Air Force Lt. Gen. James R. Clapper, Jr., challenges you to "imagine the power of GEOINT" starting on page 4 of this issue of *Pathfinder*. He paints a detailed picture of today's complex, challenging security environment - where gathering and developing good intelligence is difficult - and points to GEOINT's increasing role in addressing critical questions. We also look at some BIG ideas for meeting current and future threats. Other articles show you how NGA is fighting the war on terrorism and rebuilding Iraq.

### Coming Soon...

The July-August issue of *Pathfinder* will address how NGA does GEOINT now. This will include perspectives from several directorates and offices within the Agency.

The September-October issue will tackle the question of how NGA will accomplish its mission in the future, again from the standpoint of individuals, offices and directorates across the Agency. You will read about how NGA is transforming as the nation's preeminent provider of GEOINT.

Take this opportunity to get to know NGA! The *Pathfinder* is **YOUR** geospatial intelligence magazine. So stay tuned.

Mark Schultz  
Director, Office of Corporate Relations

# Imagine the Power of "GEOINT"

By Lt. Gen. James R. Clapper Jr., USAF (Ret.)  
Director, National Geospatial-Intelligence Agency

A military rule-of-thumb since the days of Napoleon says attackers on the ground need a 3-to-1 advantage in force strength. This maxim would have called for more than a million men and women to take Baghdad last year. Yet the job got done with less than 100,000 American and coalition troops. Moreover, the war progressed speedily, saving lives on both sides. How did the United States turn doctrine on its head, and win?

One answer, simply put, is we traded bullets for digits. In the first major conflict since e-mail virtually replaced the postcard, better information meant less uncertainty—which in turn meant less ammunition, artillery, armor, and yes, lives needed to win. Imagine layering satellite pictures with maps, topographic information and other data, plus the latest intelligence on where the bad guys are. Imagine seeing in advance where tracked vehicles can and cannot go, where explosive charges are lying on highways, where the enemy's defensive lines have gaps, where obstacles block the way. Imagine accessing this picture with a click of a mouse in the middle of the desert.

Imagery on steroids? Not quite. Rather, a new discipline called geospatial intelligence—GEOINT for short—gave America an unprecedented technological edge in Iraq, the first truly digital battlefield. GEOINT allowed troops at the platoon level to "know the Earth" like never before, and ultimately to "show the way" to Baghdad.

## Intelligence Is Not Easy

This good-news story comes amid much-publicized controversy in the intelligence business. Two back-

to-back commissions have been summoned to investigate in turn why 9/11 was such a surprise and whether the U.S. government was right about Iraq's weapons of mass destruction. Intelligence professionals take great care not to get too far in front of the analytic headlights; accordingly, in this business, words are chosen with great care. Still, mistakes do happen. As Director of Central Intelligence George Tenet said in his landmark speech at Georgetown University on Feb. 5, 2004, intelligence is almost never absolutely wrong or absolutely right. But it is important to identify mistakes and make changes as needed.

It is also important to remember that, while there is both science and art in intelligence, intelligence is harder than any science or art. In astronomy or physics, no one habitually tries to thwart the researcher. In art, truth like beauty is in the eye of the beholder. Good intelligence, on the other hand, demands accuracy. It's not easy. "By definition, intelligence deals with the unclear, the unknown, the deliberately hidden," Mr. Tenet said at Georgetown. "What the enemies of the United States hope to deny, we work to reveal."

Denial and deception are not the

only hurdles. If too little data can cause trouble, so can too much. Think overload. Technology has sparked an explosion of information, both inside and outside the intelligence community. Last year alone, about five exabytes—that's five billion gigabytes—of new information were produced and stored on paper, film, magnetic and optical media. That's the equivalent of 30 feet of new books for every person on the planet.

Meanwhile, electronic channels—television, radio and the Internet—contained almost 18 exabytes of new information. The World Wide Web has tripled in size over three years and now contains about 170 terabytes, 17 times the size of the Library of Congress print collections.<sup>1</sup> The result of this information overload is it's sometimes hard to sort through the chaff to find what you need, when you need it.

## Competition for Information

True, the information era has made life easier for our intelligence analysts in some ways—too much data is arguably better than none at all. But the glut of data also helps the bad guys. Indeed, the race for information is keener than ever. That's why so many other countries seeking an information edge have joined the



space race. As a recent RAND Corp. report noted, “The revolution represented by the Internet and personal computers extends to space with satellite communications, the Global Positioning System (GPS) and remote sensing.”<sup>2</sup>

The result is a new form of global transparency—no country can hide from peering eyes in the sky. Bottom line: If you’re a potential adversary seeking information about the U.S., you have not just the Internet to use as a resource, but also access to remote sensing satellites. And if you do not have a satellite of your own, you can always buy imagery from a country or company that has one.

So our high-tech collection capabilities are meeting serious competition. Indeed, the U.S. has a shrinking monopoly on information, and our only enduring advantage may rest not on what data we collect, but what we do with it, and how fast. We face a dual challenge: The U.S. needs to remain the best both at managing information overload—from open sources and from space—and at exploiting data quickly enough to show what matters to the decision maker in Washington, D.C. or the trigger-puller in the desert.

### **Intelligence Made Easier**

Into this picture enters geospatial intelligence. In fact, the first thing to grasp about GEOINT is the power of a picture: Through visualization, humans can quickly assimilate large volumes of information. For instance, in Iraq last year, the pace of conflict demanded quick—sometimes instant—understanding of what lay ahead in terms of terrain, enemy positions and booby traps along the way. GEOINT provided that understanding with dynamic, visual depictions of the battle space.

“Visualization is a key enabler,” said Air Force Brig. Gen. Michael Lee, former NGA Military Executive, who deployed to Iraq to make sure

the troops had the GEOINT they needed. “Visualization allows war fighters to quickly absorb context and rapidly process high volumes of information. ... In Iraq, it was all about ‘show me the picture.’”

### **In the Balkans, Afghanistan and Iraq, as well as in homeland defense, and in disaster and humanitarian relief, GEOINT has set the stage for decisions that matter.**

Sometimes, a picture is better than a thousand words. As the agency responsible for GEOINT, NGA speaks largely in pictures: from paper and digital maps, charts and other graphics to two-dimensional perspective views, interactive three-dimensional “fly-throughs” and simulations that feel like advanced computer games. While traditional intelligence generally comes in the form of the written word—in this business, there are endless reports, estimates and briefings—a distinctive hallmark of GEOINT is the visual depiction.

Still, GEOINT is about more than pictures. GEOINT makes possible in-depth assessments and judgments based on the information that is gleaned from visual depictions. In short, GEOINT is more than imagery, maps, charts and digital displays showing where the bad guys are. GEOINT at its best is the analysis that results from the blending of all of the above into a dynamic, composite view of features or activities—natural or manmade—on Earth.

This brings us to the official definition of GEOINT: the exploitation and analysis of imagery and geospatial information to describe, assess and visually depict physical features and geographically referenced activities on the Earth that have national security implications. It’s no accident that the word “geospatial” was coined to describe this. “Geo” comes from the

Greek for “Earth.” “Spatial” refers to place. In short, GEOINT shows what’s where on the Earth.

Indeed, if visualization is one key to GEOINT, another is the premium, as in real estate, on “location, location, location.” Where am I? Where are my friends? Where are my enemies? Where are the innocent bystanders? Where are the borders, boundaries and blockages along my way? Since GEOINT presents the answers to these questions in a visual way, it is a discipline that uniquely prompts quick understanding, and sometimes insight, into the future. For instance, GEOINT ideally goes beyond the “where” to answer questions like “What do my enemy’s activities in the setting of his location reveal about his capabilities, and perhaps even his intentions?”

### **Decisions, Insights and Pinpoint Accuracy**

The answers to these kinds of questions can and do influence strategy and policy from the platoon level to the President. In the Balkans, Afghanistan and Iraq, as well as in homeland defense, and in disaster and humanitarian relief, GEOINT has set the stage for decisions that matter.

For example, on the eve of last year’s war in Iraq, one of our analysts noticed oil wells ablaze in the Rumaylah oil field. Saddam Hussein had evidently begun to sabotage Iraq’s infrastructure. GEOINT showing the fires was passed from general to general up the chain of command, eventually reaching the White House. To stop Iraq’s economic future from literally going up in smoke, the decision was made to have U.S. troops step into war nine hours earlier than planned.

Beyond enabling quick decisions, GEOINT gives leaders insight in a way that only a picture can. Consider, for example, some nighttime GEOINT of the Korean peninsula that Secretary of Defense Donald



## Imagine the Power of “GEOINT”

Rumsfeld displayed during recent testimony to the Senate Armed Services Committee. The satellite image showed white dots covering South Korea, but sheer blackness north of the DMZ. “South Korea has got light,” Secretary Rumsfeld explained. “It has light and energy and opportunity and a vibrant democratic system. North Korea is a dark, dark country. The little dot of light to the left in the center of North Korea is Pyongyang.”<sup>3</sup> The picture said volumes about the economy of a closed society.

Similarly, Ambassador Paul Bremer, Administrator of the Coalition Provisional Authority in Iraq, keeps on display in his office in Baghdad a progression of “night lights” images, which clearly show with great impact the progress of electricity restoration as a measure of success in the effort to rebuild Iraq’s economy. Indeed, GEOINT can sometimes have a more useful and lasting impact than any inch-thick economic study.

For our enemies, GEOINT has delivered another kind of impact. Thanks to precision targeting, we can hit more targets with fewer bombs, dropped by fewer aircraft, at greater distances. Bad guys just can’t hide as well among the innocent as they have in the past. GEOINT allows us to choose what angle to hit a building from—at what time of day—to ensure the building next door remains untouched. As a matter of fact, our ability to determine, with unprecedented precision and accuracy, what targets to hit and avoid is a major technological accomplishment of the last decade. During the 1990-1991 Gulf War, the proportion of “smart” versus “dumb” bombs

was 20-80. Last year in Iraq, that proportion was reversed.

Indeed, NGA’s expertise is critical at every stage of a military strike. Long before any operations commence, NGA offers in-depth knowledge of potential targets. NGA also allows aircraft, vehicles and munitions equipped with GPS software to “know” where they are through the quality control NGA provides for GPS satellites. NGA then provides GEOINT that enables post-strike analyses of attacks to determine whether we need to hit the target again with long-range missiles or air strikes.

GEOINT is just as useful to our war fighters on the ground. It affords the ability to select precisely which layers of data, and what degree of details, to portray in a given product. NGA experts integrate themselves with fighting units to help them define their own requirements. “That’s exactly what I wanted,” said Maj. Gen. Dan Leaf of the Coalition Forces Land Component Command in Iraq. “But I didn’t know that until you showed me.”

### Ingredients of an Intelligence Discipline

How does GEOINT do all this?



The key is the layering of all sorts of “spatial” information. Anything that answers the question “where?” can be part of the mix. The “bread and butter” source of GEOINT has always been imagery, in all its forms across the electromagnetic spectrum, because almost by definition imagery shows what’s where.

Beyond imagery, GEOINT depends on a wide range of sources—from virtually any imaginable kind of collection platform—that tell the geographic location of natural features and human activities on Earth. We’re talking about the complete integration of imagery with mapping, charting and geodesy—plus new technologies in moving target intelligence, light detection and more. Spatial information from human sources, signals intelligence (SIGINT) and other collection tradecrafts also gets mixed in.

When all this information is digitally layered, information overload turns gracefully into interactive, tailored intelligence. Policymakers and war fighters can reach into a GEOINT product and make it their own for use in decision making and action. Imagine a soldier in the desert pointing and clicking his mouse, zooming into a digital map on a laptop to see overhead imagery of the area, or the location of power lines, or waterways, or roads, or buildings, or the latest known enemy artillery positions. The soldier has a picture of what’s going on around him, and based on that can make an assessment about the future. The power of GEOINT is the analysis, perspective and insight it makes possible.

Given that GEOINT shows spatial information—what’s where—it makes sense that it forms the basis for the Common Operational Picture (COP). After all, at the foundation of any COP is some kind of model of the Earth—usually a map or chart, but potentially a composite image

using electro-optical data, synthetic aperture radar or terrain elevation. Layered on top, you may have the locations of friendly forces, along with intelligence showing enemy positions. There really is no limit to the range of information that you could include in the “picture.”

The COP is a perfect example of how GEOINT provides a basis for “multi-intelligence” collaboration. At its heart, after all, geospatial intelligence is a multi-source analytical discipline. Other intelligence specialties are defined chiefly by their collection emphasis—human reports, electrical or communications intercepts, and the like. On the other hand, GEOINT is more defined by the analytical product or service it makes possible. It is, in fact, the self-contained medium that can incorporate reporting from all other members of the Intelligence Community. Our “canvas” is a depiction of the Earth. With a geospatial product, we use the framework of “where?” to depict “what” and “who,” to annotate “when.”

All this depends on the coming together of many different intelligence sources and tradecrafts under one roof. The National Security Agency provides a useful comparison. NSA’s discipline is SIGINT, which depends on the work of a wide variety of professionals including intercept operators, computer technicians and mathematicians. Likewise, GEOINT relies on a vast variety of professionals. NGA brings together imagery specialists and cartographers, of course, but also a range of scientists, regional analysts, aeronautical analysts, marine analysts and many other professionals—all greater together than the sum of their parts. The component tradecrafts are not necessarily new; NGA and our predecessors have been in these businesses for a long, long time. What’s relatively new is the fusion

of these tradecrafts into one coherent discipline.

The steward of that discipline is NGA. Within the Intelligence Community at large, NGA serves as the functional manager for the National System for Geospatial-Intelligence (NSG) and is the guardian of its future.

## The Future of Analysis

But what of that future? Transformation is the watchword in Washington these days. At NGA, it’s more than a word. It’s our way of life. You can read all about it in the [NSG Statement of Strategic Intent](#), which describes the vision for transformation of the entire geospatial intelligence community, not just NGA. What’s clear is we don’t look like we looked when we stood up in 1996 as the National Imagery and Mapping Agency, and we’re going to look different in 2010.

NGA’s transformation will mean three things for NGA customers. For one, it will mean world-class analysis. Think about it: What will be left for humans to do when, say, a recently uploaded missile automatically triggers one of our sensors to task another, when computers review imagery and instantly identify submarines by name, when persistent surveillance is a reality? The answer is we’ll have more time for analysis. By investing in technology—and by sharing our workload with industry and allies—GEOINT analysts will be increasingly free to do what humans do best: judge, assess, think, predict.

Another result of our transformation will be a self-service environment. The watchwords for this are phrases like “all digital,” “data-centric” and “e-business model.” What does all that mean? Think about how we use the Internet these days. We’re all used to getting the information we need, when we need it—anytime, anywhere. We demand the ability to “pull” what we’re interested

## Imagine the Power of “GEOINT”

in—news, stock quotes, even books and groceries. In some cases we assume our bank or online bookstore or news source will “push” what we need to know.

GEOINT has to follow the same model. A self-service, one-stop access portal to NGA is a key part of the solution. We want to give customers the data, information and tools they need to do what they want anytime, anywhere.

A third result of transformation involves how we will provide increasingly tailored and timely solutions to our customers. In fact, when it comes to providing tailored support, NGA is already leading the way. Look at what GEOINT analysts did last year on the ground in Iraq. Our support teams were fully integrated, making sure our troops had the tailored GEOINT they needed, when they needed it.

Transformation at its heart is also about harnessing technology. Given the proper investment in research and development, technological applications now unimaginable will continue to give the United States an edge in intelligence and security. The private sector is driving a lot of this research, along with several of our overseas allies. That’s why partnership—with industry and allies—is so important in this business.

All told, the rapid pace of innovation means we can’t know fully what GEOINT will look like 10 years from now. As General Lee put it when he returned from Iraq, “Geospatial intelligence is changing at the pace of the Internet and computers.” Maybe even faster. The one thing we can count on is that GEOINT will keep pushing old doctrine. And if that means it will take less blood and fewer resources to defend our



Beyond imagery, GEOINT depends on a wide range of sources that tell the geographic location of natural features and human activities on Earth.

country and defeat terrorism, well, so much the better.

### Footnotes

<sup>1</sup> Lyman, Peter and Hal R. Varian, “How Much Information,” 2003. Retrieved from <http://www.sims.berkeley.edu/how-much-info-2003> on Feb. 26, 2004.

<sup>2</sup> Pace, Scott, “Emerging Challenges: National Security Requirements & Economic/Commercial Interests,” in *Toward Fusion of Air and Space*, Johnson, D. and Levite, A., editors, Arlington, Va.: RAND, 2003. Retrieved from <http://www.rand.org/publications/CF/CF177/CF177.ch2.pdf> on Feb. 26, 2004.

<sup>3</sup> Remarks as delivered by Secretary of Defense Donald H. Rumsfeld, Senate Armed Services Committee, Wednesday, February 4, 2004. Retrieved from <http://www.dod.gov/speeches/2004/sp20040204-secdef0843.html> on March 1, 2004.



# Showing the Way: The NSG Statement of Strategic Intent

By Paul Hurlburt

In 2007 NGA will have accomplished some key objectives. To give a few examples, the Agency will have

- Defined and tested the capability for analysis in an environment where the collection models are “persistent surveillance” and “movement intelligence.”
- Demonstrated a new source management process that incorporates emerging sensors and platforms.
- Populated a comprehensive, integrated Geospatial Knowledge Base.
- Developed the capability to conduct rapid prototyping of breakthrough capabilities.
- Developed a capability to forecast emerging customer requirements and related enterprise impacts.
- Provided customers a common portal to the analyst’s desktop.
- Created a work environment that provides a secure, high-speed communications infrastructure with more workspace.
- Implemented a leadership development program that provides a role model for leading change.

These objectives are linked to the goals outlined in NGA’s recently adopted National System for

*The National System for Geospatial-Intelligence (NSG) is the integration of technology, policies, capabilities and doctrine necessary to conduct geospatial intelligence in a multi-intelligence environment.*

Geospatial-Intelligence (NSG) Statement of Strategic Intent.

While the NSG Statement of Strategic Intent provides the overall vision for NGA’s transformation, it is more than an update of the Statement of Strategic Intent the Agency adopted two years ago. That document, which set the direction for the Agency, with its 10 overarching goals, is still valid, officials say.

The NSG Statement of Strategic Intent goes beyond the earlier document because it envisions an expanded role for NGA with the growing importance of geospatial intelligence (GEOINT) to national security and the NGA Director as the nation’s leader for GEOINT.

In a recent e-mail to the work force, the Director, retired Air Force Lt. Gen. James R. Clapper Jr., commented on his role as functional manager for GEOINT. “I feel it’s important that all producers and users of GEOINT—in government, the military, partner countries and the private sector—understand my perspective on our activities now and in the future,” Clapper said. “The NSG Statement of Strategic Intent describes the overall vision for transformation of the entire GEOINT community, not just NGA.”

While the NSG Statement of Strategic Intent provides the overall vision for the GEOINT community, the Enterprise Operating Framework (EOF) NGA has developed provides the road map for achieving the transformational goals specified in the NSG Statement of Strategic Intent. The EOF drives NGA program and budget guidance, as well as the Corporate Transformation

Business Plan and Key Component business plans. The EOF provides specific, enterprise-wide objectives to be accomplished by fiscal years 2005 and 2007. It envisions that by 2011 “NGA will be operating in a transformed environment, providing

## The NSG Mission

*The NSG provides timely, relevant and accurate geospatial intelligence (GEOINT) in support of national security.*

## The NSG Vision

*The NSG provides GEOINT—imagery, imagery intelligence, and geospatial data and information—for planning, decision and action in support of national security.*

*The NSG is a unified community of GEOINT producers and users, leveraging expert tradecraft, regional expertise and strength in numbers, in the delivery of multi-source, multi-intelligence data and knowledge.*

*The NSG affords easy access to GEOINT databases and analytic expertise for all stakeholders.*

*The NSG tailors customer-specific GEOINT, analytic services and solutions.*

# Showing the Way: The NSG Statement of Strategic Intent

data, information and services to an expanded customer base.”

An integrated, incremental implementation model that aligns NGA’s programs and drives NGA’s transformation, the EOF tracks progress across the Agency until a capability is achieved. In providing a more rigorous process to examine NGA programs, the EOF will give better information to make investment decisions, officials say. And by incorporating the input of all the Agency’s key components, EOF will allow the Agency’s senior leaders to make decisions collaboratively. In short, the EOF will ensure that NGA’s resources are aligned against the Agency’s strategy.

NGA’s governing documents derive from and respond to an array of external guidance, such as the National Security Strategy, Defense Strategy Planning Guidance, the Director of Central Intelligence Strategic Intent, Joint Vision 2020 and others.

At the same time, these governing documents are designed to meet the challenges that face the Agency. These challenges include accelerating NGA’s transformation to meet requirements that also continue to accelerate as they change and expand due to asymmetrical threats and advancing technology.

“We cannot wait upon the availability of additional funding. It

is incumbent upon us now to show that we are invested in our own future,” officials in NGA’s Financial Management Directorate say. “We must wring every drop of advantage out of our existing resources.”

For those seeking to understand the value of GEOINT and NGA’s transformation, the NSG Statement of Strategic Intent is a key document to read. More specifically, individuals should consult the Statement of Strategic Intent to understand what they contribute to the value of GEOINT and the overall plan.

“All of us in NGA need to understand the value we bring to the success of the mission today, how that mission is changing, and what value we must bring tomorrow,” says Mark Schultz, Director of the Office of Corporate Relations. “After we get the word, we need to communicate to our stakeholders how GEOINT

is critical to national security and the role NGA plays as the leader for GEOINT.”

## NSG Community Goals

1. *Respond—now and always—to analysis and production demands in what we recognize is a perpetual state of crisis.*
2. *Champion and complete a complex set of major investments to move us to the next level of NSG capabilities.*
3. *Forge the future environment by constantly driving future technical trends and applying them to operational needs, inserting technology rapidly and providing GEOINT data and analysis, services, integrated systems and solutions.*
4. *Align human resource plans, policies and services with the NSG Statement of Strategic Intent Core Values, in recognition that all that we do is completely dependent on our most important resource, our people—government and contractor.*
5. *Continue transformation of NSG business practices to enhance the provision of GEOINT.*
6. *Capitalize on all forms of traditional and non-traditional sources, to include National Technical Means, airborne, civil and commercial sources.*
7. *Champion multi-intelligence (Multi-INT) collaboration.*
8. *Rely on our partners—both domestic and foreign—to help execute our mission and achieve our vision.*
9. *Transform our infrastructure.*

## The NSG Core Values

*In the NSG Community, we are committed to ...*

*Customers ... both as national intelligence and combat support activities—from the highest level to the tactical, as well as international partners.*

*People ... their personal integrity, professionalism, growth, leadership and accountability.*

*Culture ... partnership, diversity, collaboration, creativity, risk-taking and mutual trust and respect.*

*...Excellence in all we do.*

*The NSG Community consists of the NGA, the other national and defense intelligence community agencies, the military departments, the combatant commands and parts of the civil community.*

# The Next Big Ideas: Multi-INT and Horizontal Integration

By Michele Weslander

**M**ulti-Intelligence (Multi-INT) and horizontal integration are key concepts for unleashing the power of geospatial intelligence (GEOINT) and facilitating collaboration between personnel from the intelligence disciplines, including analysts and collection managers.

GEOINT provides the contextual foundation for Multi-INT, which is the collaboration of two or more intelligence disciplines. An example is the signals intelligence (SIGINT) and GEOINT disciplines working together and sharing data to provide more complete information to customers. Multi-INT can involve the use of commercial imagery and other open sources.

Horizontal integration enables Multi-INT collaboration, facilitating interactions that must occur for Multi-INT collaboration at various levels across the “vertical stovepipes” of the intelligence disciplines. Horizontal integration involves people, policies, procedures, data and systems.

NGA is committed to the success of Multi-INT through horizontal integration. One of the core goals in the National System for Geospatial-Intelligence Strategic Intent is to “champion Multi-INT collaboration.”

In the area of data collection, Multi-INT optimizes the use of sensors through coordinated tasking, tipping and cueing. Through Multi-INT collaboration, analysts from different tradecrafts gain perspective through the additional insight provided by other intelligence disciplines. Sometimes data collectors and analysts are able to tip each other to information that would have otherwise gone unnoticed. For example, communica-

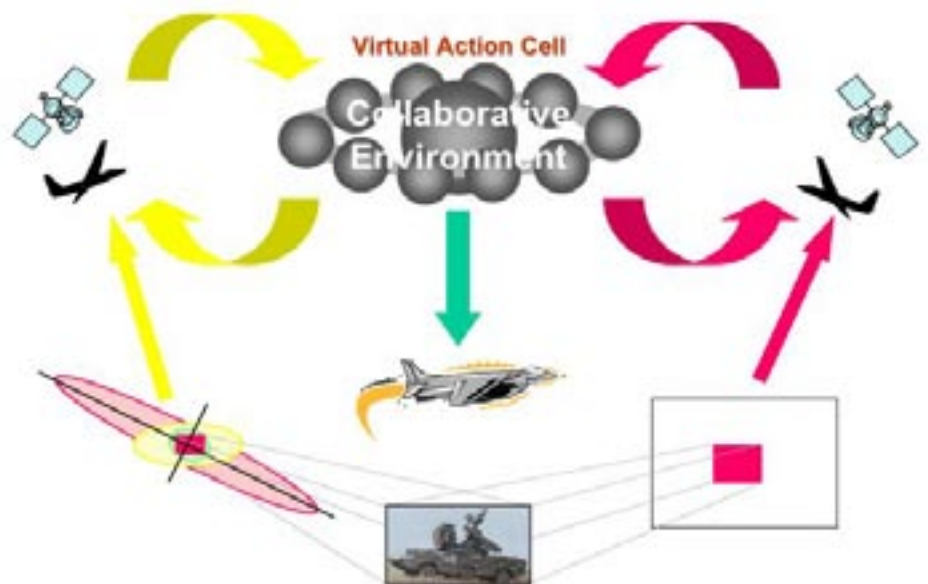
tions intelligence (COMINT) might learn that an event is about to occur and automatically tip GEOINT capabilities to obtain relevant imagery.

GEOINT and SIGINT analysts are collaborating to produce Multi-INT products, some of which are provided directly to customers—shortening and streamlining a process that has traditionally been linear while providing more complete and accurate information. Multi-INT is all about speed, accuracy and depth of content. Information can be discerned faster through virtual collaboration, thereby shortening timelines for decision-makers. Multi-INT products are more accurate because they correlate multiple data points, and they provide important context through the integration of multiple data sources.

A joint Intelligence Community-Department of Defense Time Sensitive Targeting (TST) exercise exposed three potential barriers to more comprehensive Multi-INT collabora-

tion: people (culture), policy and procedures. Collaboration occurred only when change agents saw the value in overcoming these barriers and made a personal effort to make the collaboration happen—even if it was not “convenient.”

After the attacks of Sept. 11, 2001, the Intelligence Community realized that a concept of operations like the TST could be applied to hunting down terrorists. The initial, inefficient effort, which required installing multiple network connections in one “war room,” exposed another barrier, that of multiple communications modes. What was obviously needed was a way to virtually bridge people across the different systems. NGA Director retired Air Force Lt. Gen. James R. Clapper Jr. provided vision and was the community champion for those endeavoring to make Multi-INT TST happen. NGA’s closest mission partner, NSA, also realized the value of collaboration as



## Time Sensitive Targeting

Virtual collaboration between signals intelligence (SIGINT) and imagery intelligence (IMINT) analysts results in joint production of targeting information, which they pass to war fighters in near real time.



a standard way of doing business, and the GeoCell effort, comprised of NGA and NSA analysts, co-located at NSA, began.

NGA envisions pervasive collaboration between NGA and NSA, with analysts seated in their native work environments. At the same time, NGA continues to seek opportunities at other locations to integrate with mission partners' operations. The objective is to find the "critical mass" for on-site, co-located support and then leverage corporate, enterprise-wide knowledge through virtual collaboration.

While NGA has been primarily focused on the GEOINT-SIGINT partnership—putting America's "eyes and ears" closer together—this same model can be applied in building partnerships with experts in other disciplines.

In August 2002, NGA gained responsibility for what was formerly known as imagery-derived MASINT (measurements and signatures intelligence) and is now called Advanced Geospatial Intelligence (AGI). NGA's Geospatial Intelligence Fusion Center (GIFC) is the seedling for transforming the Agency's analytical model from its traditional focus on electro-optical imagery to the integration of other advanced forms of imagery and data from various sources. The vision for GIFC is to bring timely, actionable and unprecedented GEOINT to the nation's decision makers.

The Internet and Web technologies have made it possible to provide easy access to multiple data sources via portals. A portal provides a single entry point to an open standards-based expandable network architecture. It provides consumers, analysts

and co-producers with centralized, customizable, assured access to data, services and expertise both internal and external to NGA. One of the key thrusts of the Agency's Enterprise Operating Framework is the creation of a corporate NGA Portal, which will do just that.

As horizontal integration continues to expand, both within disciplines and across disciplines, the future will involve ubiquitous and pervasive Multi-INT collaboration across the National Security enterprise.

#### About the Author



Michele Weslander, formerly Director of the Horizontal Integration Office and NGA's Chief Engineer for Multi-INT, is now NGA's Deputy Technical Executive.

## Horizontal Integration: Why Is It Different?

By Lon Hamann

"The President and many of his aides rightly believed that the surprise attack could have been blunted if the various commanders and departments had coordinated their actions and shared intelligence"—a finding from a recent congressional hearing? No. This statement was made 60 years ago after an investigation following the attack on Pearl Harbor.

The challenge of those findings remains: the breaking down of "stove-piped" intelligence processes and removing policy and cultural barriers to inter-agency collaboration.

This is why *horizontal integration* is such an important idea.

### What is Horizontal Integration?

In business parlance, horizontal integration is the addition or expansion of business activities at the

same level in the value chain, often through acquisitions or mergers. But in the Intelligence Community (IC), horizontal integration is best defined as integration across sensor types and intelligence organizations, to improve support to policy and operations. Information sharing, multiple sources and cross-discipline collection, and analytical collaboration are inherent components of this definition.

While we have been using multiple sources, sharing information and collaborating for years, the concept of horizontal integration is different because of the depth and breadth of the collaboration.

### Depth of Collaboration

In the IC today, collaboration is often defined more by an organization's history than any practical business rationale that is applicable to current and future operating and policy

environments.

On one extreme, collaboration is defined as the "sharing of data." This is increasingly accomplished digitally through access to databases and finished products posted on the IC's Intelink network. Such access is an important first step in realizing the vision of horizontal integration. Yet historically, this world view limited intellectual "collaboration" to a sequential one-way flow of information and ideas.

At the other extreme, collaboration grows significantly more intensive and more integrated, perhaps best epitomized by *joint* intelligence production—a deep level of collection and analytical collaboration that maximizes use of cross-discipline sources, capabilities and expertise to produce better intelligence—faster.

Horizontal integration seeks to expand access to people and informa-

## “Community Collaboration”

### What’s Wrong With This Picture?



#### War Room

The initial, inefficient effort to enhance time-sensitive operations depended on multiple network connections in one “war room.” This exercise exposed the need to virtually bridge people across the different systems.

tion, *and* to mainstream a deeper, more intensive collaboration that will increase the speed of intelligence responsiveness by minimizing sequential processes and hierarchical information handoffs.

#### Breadth of Collaboration

Analytical collaboration is not a new idea. Often this collaboration results from an initiative by one individual or a small group of analysts, or it is the byproduct of an intensive community focus on a difficult intelligence problem. Still at other times it results from organizational efforts such as the collocation of NSA analysts at the National Security Agency (NSA). When these successes occur, often only small parts of the intelligence organizations are involved and “stovepipes” go unchanged. When captured, the lessons learned are difficult to share and sustain across one organization, let alone the wider community. However, when shared, these successes give us a tantalizing glimpse at the potential of wider access to information and easily

facilitated collaboration.

Today analytical collaboration most often is accomplished on a large scale through physical collocation such as the Director of Central Intelligence Centers. For example, the DCI Center for Weapons Intelligence, Nonproliferation and Arms Control brings together experts on all types of foreign weapons threats into one center. These centers exist to address significant and enduring national security challenges. More importantly, the underlying business processes of the centers are synergistic collection, analysis and management, achieved through collocated cross-discipline teams. The result is critical analytical convergence—the horizontal integration of collection and analysis.

The 1996 report of the House Permanent Select Committee on Intelligence, *The Intelligence Community in the 21<sup>st</sup> Century*, described this intensive face-to-face interaction as key to developing new cross-discipline collaboration. NSA’s efforts with NSA certainly validate these two

points. Horizontal integration seeks to mainstream from the desktop collaborative multi-source collection *and* pervasive multi-discipline analytical collaboration. The goal is to scale up from individuals and small-team collaboration to offices and agencies until the breadth of the community “really acts and functions collaboratively to get our work done,” as Director of Central Intelligence George J. Tenet has put it.

#### Trust Is the Key

Horizontal integration seeks to apply the community’s collective expertise and knowledge against an intelligence problem early in the process. Seamless information access and technical interoperability are essential, but they are not sufficient because horizontal integration is not simply about technology. If it is, “We might as well go home,” as the Assistant Director of Central Intelligence for Analysis and Production, Mark Lowenthal, said at last year’s Geo-Intel symposium in New Orleans.

Trust is the key to the success of horizontal integration: Trust between analysts creating processes that support deeper and wider collaboration. Trust that individual contributions are recognized and valued, while simultaneously reinforcing information sharing and collaboration as core business traits. And trust between systems that support rapid information sharing, fusion and collaborative analysis, while still protecting sources and methods.

Technology provides the capabilities to gather, correlate, fuse, analyze and portray information and knowledge in new ways. For the bold, these enabling capabilities signal opportunity—a chance to explore and create new more fully collaborative intelligence collection and analytical concepts. And to turn these concepts quickly into new methodologies and processes to deal with difficult and complex national security challenges.

Consider the development of Magnetic Resonance Imaging (MRI) in the medical field. At one level, the MRI merely provides doctors with an alternative to an X-ray. Yet, since the MRI is non-ionizing, it allows the creation of multiple pictures. Fusing multiple two-dimensional images makes possible the creation of a three-dimensional model of the patient, resulting in new capability and lives saved.

Philosophically, the intelligence community spends a considerable amount of money and time breaking the world down into stove-piped processes. It then requires more money and time to reassemble these pieces into “finished” intelligence products. But time is a luxury that we do not have. Consider what horizontal integration means: shared intelligence that will ultimately save lives.



## GEOINT Assessment Activity Begins

By Al Price

Assessing the application of geospatial intelligence (GEOINT) resources and capabilities across the National System for Geospatial-Intelligence (NSG) is the focus of an initiative known as the Geospatial Intelligence Assessment Activity (GAA). Now under way, the GAA supports NGA Director retired Air Force Lt. Gen. James R. Clapper Jr. in his role as functional manager for the imagery, imagery intelligence and geospatial informational investment activities of the Department of Defense (DoD) and Intelligence Community (IC).

Following a corporate business approach, the GAA brings together similar NGA assessment, review and survey efforts into an integrated, process that reflects the information needs, equities and interests of the Agency's senior managers, Key Components (KC) and staff elements.

### GAA Pillars

Two equal and balanced pillars form the basis of the GAA.

First, the GAA assesses the overall effectiveness and quality of GEOINT products/services and operational support at customer locations. These include the national and defense intelligence production/fusion centers, the military services and combatant commands, and embedded NGA support to the United Nations and allied and coalition operations.

The second pillar is an analysis of GEOINT issues and functions of significance within the defense and intelligence communities as well as nationally and internationally.

The assessment methodology relates to all aspects of GEOINT investment, including customer satisfaction, product/service quality, investment strategy, policy/doctrine development, system/infrastructures and process integrity. The duration, degree and frequency of an assessment activity are dependent on the dimension and complexity of the organization and/or issues/functional topics. Due to the significant GEOINT investment at national and DoD production centers, an annual or biannual review may be necessary to maintain information accuracy and integrity.

GAA issues/functional topics may be nominated to the Director of NGA's Office of Geospatial Intelligence Management (OGM) at any time. Following the completion of an assessment activity, base data (raw), vetted and analyzed information, and the observations and recommendations that are developed by the GAA team will be made available for corporate NGA and, as appropriate, customer consumption, utility and action.

### GAA Data Warehouse

The GAA database is a key deliv-

erable under the NGA Enterprise Operating Framework Corporate Customer Management (EOFCM) Thrust. The initial database is a commercial off-the-shelf (COTS) product that will promote a cost-effective transition without the loss, reentry and/or restructuring of legacy data when the objective database is delivered. The objective database, a COTS application, will permit secure, traceable read/write access, common metadata fields, and standard search tools, user-designed profiles and product formats.

### Inaugural GAA

The inaugural GAA is under way at the U.S. Pacific Command and its theater components. The following GAA issues/functional topics are currently under way: review of fiscal 2005-2006 NGA deployed analysts, integration of Reserve/National Guard intelligence into the NSG and an assessment of Advanced Geospatial Intelligence (AGI) capability.





# NGA Teams in Iraq: Meeting Many Needs

**EDITOR'S NOTE:** In February 2004, Army Col. Jean-Pierre Manley returned from Iraq, where he was Chief of the NGA team supporting Combined Joint Task Force-7 in Baghdad. This is his report:

**W**hy is NGA in Iraq? This is a good question for those who may wonder why a national-level intelligence agency has representatives in an area of the world that the Department of Defense still considers to be a combat zone. Why would such an Agency, which provides our nation with all kinds of geospatial intelligence (GEOINT) in a variety of forms and levels of classification, want to send its employees (military, government and contractor) into a potentially dangerous environment? Who are these employees and why did they volunteer to deploy? Finally, what do they get out of this experience both professionally and personally?

## The NGA Support Mission

Before attempting to answer the questions concerning personal motivations, I should first address what is required of NGA in Iraq. By now, the war fighter's need for NGA information and products is well known. GEOINT is the framework for intelligence preparation of the battle space, as well as for all planning that takes place before, during and after a conflict. Decisions are made every day from the strategic to the tactical level based upon accurate and timely GEOINT. When an NGA Support Team (NST) deploys, it brings with it a reach-back capability to NGA's extensive staff and production elements in the United States. This enables the supported agency or unit to access immense amounts of geospatial data and the expertise of thousands of NGA employees.

At the forward operating locations in Iraq, GEOINT support is provided by the NSTs in many forms. Whether an image or a map-based product,



The author, Army Col. Jean-Pierre Manley, second from right, and another member of the NGA Support Team, right, take a break with customers on the Combined Joint Task Force-7 staff, from left, a Ukrainian, an Australian and a U.S. Army warrant officer.

in paper or digital form, the support teams always customize their work to meet the needs of the requesters. Using the extensive digital resources resident on NGA Web sites, data stored on the hard drives of deployed team members and information available from the in-theater Geospatial Information Library located in Bahrain, NSTs create tailored GEOINT. This intelligence is then combined with intelligence from other sources to provide the military commander with an accurate and timely assessment. Perhaps most importantly, the NST's forward presence in Iraq minimizes the requirement for customers to rely on dated printed information. An NGA support team can help bypass hardcopy delivery channels and provide a common digital geospatial and imagery baseline, saving time and resources for the supported command.

## A Little History

I need to briefly review the developments that brought NGA and its predecessor organizations into the business of directly supporting war fighters in forward-deployed locations. Providing national agency support to our forces in the field has a relatively long tradition in the U.S. government. Many are familiar with the exploits of the founding members of the Office of Strategic Services (OSS), the CIA predecessor organization, during World War II. Operations in wartime theaters by most of the newer national intelligence agencies continued throughout all of the subsequent conflicts of the 20<sup>th</sup> century. It is during more recent crises that small teams of analytical and support personnel were quickly formed to deploy forward into crisis areas. These elements, often called National Intelligence Support Teams,

or NISTs, are frequently assembled from various agencies and placed at the headquarters of the local operational level military commander.

NGA often participates in NISTs when crises erupt around the world. NGA support can take the form of individual augmentees, or a completely self-sustaining NST using specialized equipment such as imagery workstations and geospatial-analysis laptop computers. Military commanders who host these teams appreciate national-level support in their area of operations, particularly if the team members are subject matter experts in their field and arrive with their own equipment and communications capability.

### **CENTCOM Support**

The U.S. Central Command (CENTCOM), as the unified military command that has seen the largest number of crises over the past 15 years, continues to play a major security role in the Middle East. It should be no surprise that NGA and its predecessor organizations have been participants in all of these events. Through its full-time support team at CENTCOM headquarters in Tampa, Fla., NGA orchestrates the in-theater GEOINT support that the command requests and then prioritizes.

As crises develop and U.S. forces deploy to locations such as Afghanistan, Kuwait, Iraq, the Horn of Africa and elsewhere, the NST at Tampa ensures that the requirements for support are clear and passes them on to NGA headquarters. NGA senior leaders determine the actual level of support to be provided, including the number of personnel at each deployed location and the equipment necessary to accomplish the assigned mission.

### **Operation Iraqi Freedom**

From the early phases of the long-simmering Iraq crisis, NGA quickly recognized a need by CENTCOM war fighters for forward-deployed

GEOINT support. The mission was to provide as much national level assistance as possible while not duplicating capabilities that the forces themselves would be bringing to the fight. In March 2003, for the first time in its history, the National Imagery and Mapping Agency, now NGA, deployed its most senior military officer to oversee Agency support to the CENTCOM area of operations. Military Executive Air Force Brig. Gen. Mike Lee orchestrated the rapid build-up of NGA teams deploying to a variety of military headquarters ranging from the CENTCOM Forward Command Post in Qatar to the forces deployed in Kuwait that were eventually sent into Iraq. In a groundbreaking decision, NSTs were assigned to Army maneuver elements, including the 3<sup>rd</sup> Infantry Division that helped lead the ground attack in Iraq.

During combat operations, a support team that used the newly developed MIGS, or Mobile Integrated Geospatial-Intelligence System, supported Combined Forces Land Component Command (CFLCC) headquarters. Through the MIGS, and its reach-back power, all NGA products and services are available to front-line forces in the most remote and austere locations. It is mounted

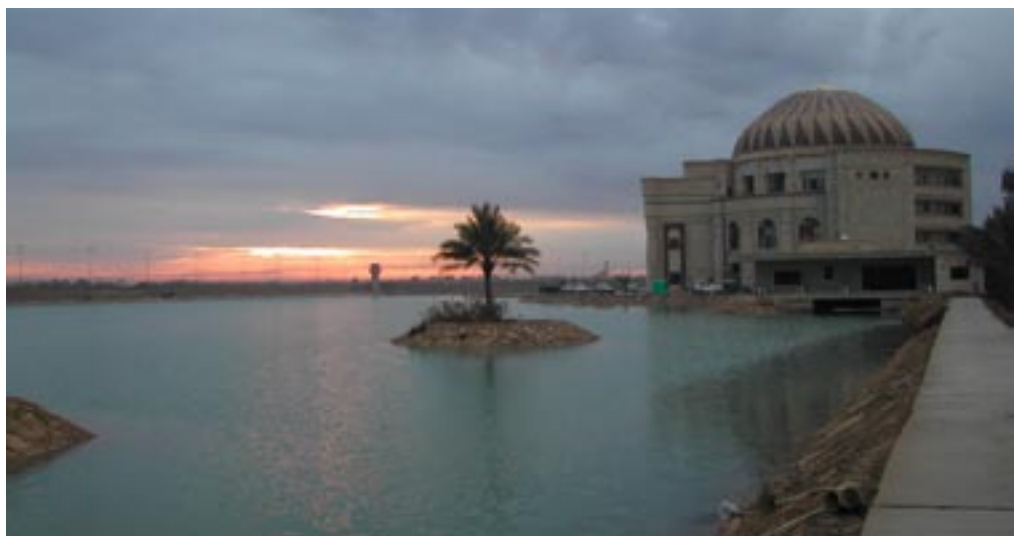
in an environmentally controlled shelter loaded on two High Mobility Multi-purpose Wheeled Vehicles (HMMWVs). The system includes its own tents and two generators so that the team members can operate independently of external support. Thus, when the time came, MIGS and its support team deployed north from Kuwait and ended up at the renamed Baghdad International Airport with the victorious U.S. forces.

By May 2003, the situation had stabilized sufficiently so that the first MIGS team in Baghdad moved into the kitchen of one of Saddam Hussein's nearby palaces and continued to support the CFLCC headquarters. CFLCC subsequently turned over control to the newly created Combined Joint Task Force-7 (CJTF-7) multinational headquarters and its subordinate units. Over the next few months, new NSTs were deployed to other locations in Baghdad, while teams that had been deployed in Iraq rotated back to home station. MIGS operated for a few months at the palace, but since it is optimized for contingency operations, and there was no longer a requirement to be mobile, other systems replaced it.

### **Working in Iraq**

In the current environment, U.S. and coalition forces assigned to

Continued on page 19



Another dawn rises over Iraq Survey Group headquarters in Baghdad.



# **MIGSII**    **Mobile Integrated Geospatial-Intelligence System II**

## **How does NGA provide improved forward support to our customers?**

NGA's Office of Deployed and Externally Assigned Personnel (ODP) deploys personnel and systems during crises to assist military and federal customers in using NGA products and services, with the challenge of taking up little of the customer's footprint, and using organic communications whenever possible.

The flagship of this type of forward NGA support is the **MIGSII**.

During Operation Allied Force in Kosovo, NGA recognized the need for a robust deployable system that could withstand harsh environment conditions and be mobile with the troops. The result was the MIGS, a mobile, fully self-sustaining suite of equipment, life support and transportation. MIGS provides mobility, internal power support, robust bandwidth all the while protecting the systems from exposure to harsh environmental conditions.

The MIGSII resides on a "Humvee" (High Mobility Multipurpose Wheeled Vehicle, or HMMWV), and includes a mounted Trojan Lite II SATCOM suite, integrated power and server control, and internal backup power. MIGSII allows NGA personnel to move with the war fighter. Within two hours, MIGSII can be unpacked and be producing tailored geospatial intelligence. Also, the system provides the NGA team access to SIPRNET, SBU, Video Teleconferencing and phone service.



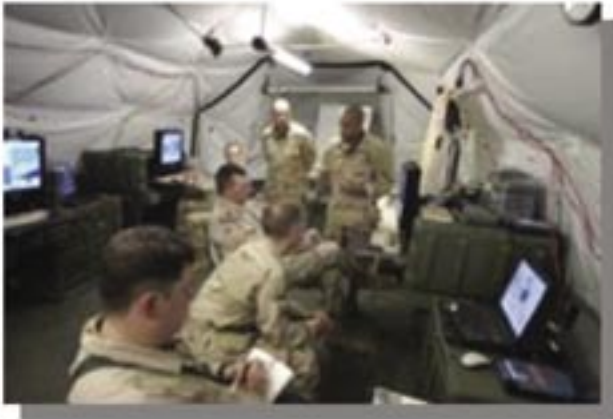
## **Capabilities**

MIGSII incorporates the capabilities of a robust geospatial intelligence exploitation system—the Quick Response System (QRS) with the reachback of the NGA Deployable Communications System (NDCS, via the integrated Trojan Lite II antenna). The MIGSII, which supplies its own electricity through an organic generator, provides power and room for three workstations in the tents.

NGA has contracted bandwidth to provide coverage throughout Europe, Africa, the Middle East, Asia and Australia. Using the MIGSII integrated Satellite Comms with the QRS allows customers access to the NGA Gateway, NGA Reach Back team, WARP (Web-based Access and Retrieval Prototype), and Joint Warfare Analysis Center servers without impacting customers' communications.



# **MIGSII**    **Mobile Integrated Geospatial-Intelligence System II**



## **Feedback**

Military commanders use the MIGS' customized, on-demand products to visualize the battlefield and make decisions concerning force protection, battle cadence, and routes to be traversed, as well as initial targeting feasibility. They had high praise for MIGS. "This is exactly what we will need in Baghdad!" said Major General "Spider" Marks, CFLCC Command and Control officer. After viewing some of the products available via MIGS Major General Dan "Fig" Leaf, Chief of the Air Component Coordinate Element (ACCE), said, "That's exactly what I wanted, but I didn't know that until you showed me."

## **Future Plans**

In Iraq, the MIGS surpassed all expectations. Teams provided support to the war fighter with customized geospatial intelligence products used to support operational decisions. Based on the success of the original MIGS, NGA is taking possession of the first of two MIGs II variants (MIGSII and III). These will include newer, better equipment and superior integration with field and National System for Geospatial-Intelligence (NSG) systems.

## **Components (MIGSII)**

M1113 HMMWV with equipment shelter for the QRS, the Satellite Communications Suite and the folding 2.4 meter C-Band Radar Dish.

M1113 HMMWV Troop Carrier

DRASH trailer with one 20 Kw Generator and one 8 Ton (96K BTU) ECU.

Cargo Trailer (2700lbs of available cargo weight)

300 sq ft operations tent

200 sq ft personnel tent

Mobile Video Teleconference System "Mobile Eye"

*For more information contact the NGA ODP Operations Division, 703 264-2140*

# NGA Teams in Iraq: Meeting Many Needs

Continued from page 16

CJTF-7 are conducting offensive operations to defeat non-compliant elements and neutralize destabilizing influences in Iraq. The coalition also conducts stability and security operations to support the establishment of local governments and economic development. The Iraq Survey Group continues the search for weapons left by the previous regime, among other projects, and the Coalition Provisional Authority provides administration and political control while working

and the organization that is supported. The workload also depends upon what the armed forces call "operations tempo." Team productivity is often fluid as there can be a steady flow of projects, then periods of inactivity, followed by high intensity operations that require quick turnarounds. In other words, there is frequently no "normal" workday or a guaranteed 12-hour shift. Flexibility is essential, and the expectation is availability whenever the customer

analyst is often under pressure to produce rapidly. Accuracy counts in combat situations, and since much of NGA field-produced GEOINT goes directly into the hands of the war fighter, there is no room for error. Products of deployed personnel are also used to assist in force-protection planning, disposal of excess munitions, and route studies for unit movements. In addition, the geospatial information provided to assist in Iraq reconstruction is no less important. NGA products that are either completed in the field or produced in the United States are central to accurately assessing needs and ensuring proper implementation of many Iraqi infrastructure projects. These have included power and oil line repairs, reconstruction of water and sewage works, and the rebuilding of schools and other key government buildings.

## Life in the Field

The physical and mental challenges faced by deployed NGA people are the same as those faced by many thousands of other servicemen and women, government employees and contractors working throughout Iraq. Personal security is always a concern, and unfortunately two NGA employees were evacuated in 2003. One was injured during a rocket attack and the other had non-combat related emergency surgery. Both were well cared for and safely returned to the United States. Currently NGA personnel work alongside customers in secured compounds. While there is always a risk in such an environment, it can be minimized by limiting travel off base and wearing protective equipment during periods of increased threat.

There have been many changes to living conditions since the first support team entered Baghdad in May 2003. Initially, team members were sleeping in the rough, eating



NGA Director retired Air Force Lt. Gen. James R. Clapper Jr., second from left, receives a memento from members of the NGA Support Team at the Iraq Survey Group during a visit to Baghdad in January.

to turn over full national sovereignty to a new Iraqi government. NGA support team members, acting as individual augmentees or as part of a larger NST, contribute directly to the accomplishment of these diverse missions and those of other U.S. agencies in Iraq. And NGA people serve with the Army's 4<sup>th</sup> Infantry Division, which has conducted many of the counter-insurgency operations from inside the Sunni triangle.

What should an imagery or geospatial analyst expect to accomplish while in Iraq? The answer will vary depending upon the team location

needs NGA assistance ... 24 hours a day... seven days a week. Sending a project or information request back to the United States is not usually an option. Obtaining customer confidence is key. The goal, as one recent NGA support team leader was fond of saying, is to "make every customer a repeat customer ... because a repeat customer is a happy customer."

The gratification of immediately seeing the results of their work put to use is what is the most satisfying for deployed NGA employees in Iraq. Many requests for information require quick responses, and the



field rations—the infamous “MRE” (meals, ready to eat)—and keeping their nuclear, biological, chemical (NBC) protective gear close at hand. Helmets and body armor were worn continuously, and people never strayed far from their assigned work area. Maintaining personal hygiene during that first hot summer was a challenge. Water was rationed, showers were infrequent and clothes were washed by hand. Entertainment during time off usually consisted of pulling out a well-worn paperback.

Nowadays, the sleeping accommodations include semi-permanent tents complete with wooden floors, electric outlets, air conditioning and heating. Most locations have permanent or temporary buildings for personnel to sleep in. Every site has a contractor-run dining facility serving four hot tasty meals a day. (Midnight “chow” anyone?) The NBC gear is stored away, while body armor and helmets are usually only worn when traveling between secure bases. Hot showers are available anytime, and a free laundry has three-day service. Relaxation opportunities are abundant since everyone has access to DVD players, rudimentary gymnasiums, swimming pools and recreation centers. At various coalition bases in Iraq, one can find barbershops, post exchanges, gift shops and even Burger King, for those needing a fast food fix.

Despite these amenities serving in Iraq today can be challenging and sometimes difficult. Scorching heat can turn to cold and wet weather, and the infrequent dust storms leave inches of dirt inside of anything you wear or live in. When the rains come, there is no place for the water to go. The soupy mud is omnipresent, sticking to heavy boots and camouflaging every vehicle in sight. The continuous hum of generators is a reassuring sound, although that does not prevent occasional power spikes or



The new NGA seal adorns the NGA Support Team Trailer at Combined Joint Task Force-7's Camp Victory in Baghdad. The satellite dishes tap both commercial and government imagery sources. The trailer is co-located with an Army topographic team trailer in the background.

outages that do wonders for computers and communications systems. On base, plastic “porta-johns” can be found on every block, which add some color to a landscape dominated by sand bags, security fences and bomb blast barriers. Almost everyone you meet is carrying some kind of weapon and a minimal amount of ammunition.

### Why Deploy to Iraq?

Why would anyone volunteer to spend three months (the average deployment period) away from family and friends in a place like today's Iraq? Everyone who answers will most likely give a personal reason. It could range from the desire to contribute in some small way to the global fight on terrorism; to help with the return to normalcy for the long suffering Iraqi people; or, simply to satisfy a need for a professional challenge in a different environment. There really is no typical NGA deployee. The requirement is for an experienced imagery or geospatial analyst who has the desire to quickly learn new skills and adapt to difficult environments. Job satisfaction comes

from overcoming obstacles and seeing an immediate benefit from your efforts.

The need for GEOINT experts is certain to continue in Iraq for the near to mid term. While the locations and composition of NGA support teams may change, the challenges remain ... as does the satisfaction that important work is getting done. NGA has a decisive role to play in Iraq and will continue to make a difference.

### About the Author

Colonel Jean-Pierre Manley was assigned to NGA last August. After a few months serving in the Office of International and Policy, he volunteered to deploy to Iraq as NGA Liaison Officer and Chief of the NGA Support Team supporting Combined Joint Task

Force-7 from November 2003 to February 2004. He plans to retire in the summer of 2004 after serving 28 years in the Army as a military intelligence and foreign area officer. He hopes to return to Baghdad some day, he said, “as a fun-loving tourist.”





# Report Credits NGA for War Role

**F**ield-deployed NGA Support Teams (NSTs) were a success during operations in Afghanistan and Iraq. That's the assessment of the report "America at War: Technology Lessons Learned," published March 1 by the National Technology Alliance (NTA).

NGA's "use of direct support teams proved a large success in Afghanistan and Iraq," the report states. "The teams were not simply an NGA liaison; rather NGA fielded many of its skilled analysts and technicians together with full geographic information systems (GIS), imagery processing computer workstations and field equipment....

"A field-deployed technologically sophisticated support team has proven a valuable method to bridge the gap between cutting-edge technological product and field user sophistication in its employment.... As information technology becomes more sophisticated and the actual understanding of how to use all of the capabilities becomes more and more limited, the result is technology specialization.... The needs for

technology handlers will certainly increase throughout the military and through all agencies involved in fighting terrorism with information resources."

NGA's support teams also played a valuable role in identifying pertinent data from NGA's deployed storage systems, saving limited bandwidth for downloading new imagery and data, the report says. Most NSTs also provided their own communications equipment allowing dedicated imagery and GIS bandwidth.

Transporting large quantities of imagery and geospatial data to the field remains a challenge, the report notes: "A single broadcast TV-quality video stream, such as that taken by an unmanned aerial vehicle, can easily require as much bandwidth as a thousand voice channels....

"A major problem for NGA is finding a mechanism for understanding what areas are of timely interest to the customer and navigating the customer through the relevant data," the report says.

In a successful example, an NGA

NST down-loaded high-resolution national imagery less than a week old that allowed Army Lt. Gen. William S. Wallace, commander of V Corps, to walk through his invasion route prior to entering Iraq. Wallace "came away from that session confident that the route would present no problems," the report states.

The NTA is a U.S. government program to influence commercial and dual-use technology development with an emphasis on meeting national security and defense technology needs. NGA functions as the executive agent for the NTA program and executes the program on behalf of the Intelligence Community, Department of Defense and other government agencies.

The Rosettex Technology and Ventures Group, an NTA commercial partner, prepared the report. Rosettex is a consortium of over 70 information technology organizations including commercial companies, academic institutions and research organizations.

—Paul Hurlburt

## Changes Strengthen Support Team Role

**T**he chiefs of NGA Support Teams (NSTs) now represent NGA and the Director at their assigned command or service, following a recent organizational change designed to strengthen the relationship between NGA leadership and the military commands and services.

At the same time, the NST chiefs assigned to the Central, European, Northern, Pacific, Special Operations, Strategic and Transportation Commands will continue to lead the production element supporting their command. These chiefs now report to both the Agency's Military

Executive (MX), Air Force Brig. Gen. Dale C. Waters, as representatives of the Director, and to their respective "reach-back" office director in NGA's Directorate of Analysis and Production (P).

The service NST chiefs, assigned to the Air Force, Army, Marine Corps and Navy, as well as the Joint Forces Command NST, have been reassigned to MX. However, imagery analysts located at the service intelligence centers remain within the P Directorate.

The international NSTs—Europe, Asia Pacific and the Americas—and the Agency NSTs—CIA, DIA, Home-

land Security, NRO, NSA, Pentagon and State—remain aligned to their respective organizations.

All NSTs are Key Components within NGA.

Announcing the changes, NGA Director retired Air Force Lt. Gen. James R. Clapper Jr. and Deputy Director Joanne Isham said they will enable NGA to build on its partnerships with military customers and will provide appropriate representation to the most senior levels of the commands and services.

—Paul Hurlburt

# The Voice at the End of the Phone

By Tom Cooke

It's 5:15 p.m. You've logged off the computer and put on your coat when the phone rings. Although your daughter has a Girl Scout meeting in a little over an hour, you answer it.

"Hi, this is Staff Sgt. McManus from CENTCOM J2. I was told you could help me get a copy of a fly-through of my mission area."

You look at your watch and quickly do the math ... 35 minutes to get home if the toll road isn't backed up, 10 to slam down dinner and 15 to the school ... you're already late. But the caller is from Central Command's Joint Intelligence Staff and he needs your assistance, now.

"Sure, sergeant, hang on."

With the phone wedged between your head and shoulder, you hit the Ctrl-Alt-Delete keys, already rehearsing the phone call you'll make in the next 10 minutes that begins with, "Honey, something came up and I'm going to be late ..."

Ten minutes later you're on your way. You skip dinner to make up the time, and your daughter makes it to her Girl Scout meeting. As you hit the parking lot, Central Command's McManus is running into his boss' office.

"Sir, I got it! Got hold of an analyst at NGA ..."

The next morning you don't remember McManus by name. You tell your co-workers you "got stuck" last night when "some guy from CENTCOM called looking for a fly-through." To you, he was merely a voice at the end of the phone. But to him, you were NGA.

NGA is leading the way in providing tailored intelligence support to our war fighters and senior decision makers at levels unprecedented in our nation's history.



Photo by Kerry Gilbert

Logged off his computer and ready to go home, an analyst gets a phone call he can't ignore.

Whether it's war fighters in the field, the President or civil agencies, NGA provides geospatial intelligence (GEOINT) for the nation. The Agency has resident NGA Support Teams (NSTs) fully integrated at *every* major command and intelligence agency within the federal government. NGA's imagery and geospatial analysts are deployed alongside war fighters in Afghanistan and Iraq, and are supporting domestic force protection efforts at home. Anything that may be geospatially referenced on the Earth is in NGA's domain. NGA keeps the Global Positioning System calibrated, cruise ships off sandbars and aircraft within their lanes as they fly around the globe.

NGA's National System for Geospatial-Intelligence, or NSG, is designed specifically to provide timely, relevant and accurate GEOINT to all who need it, in a format they can use. McManus doesn't know any of this.

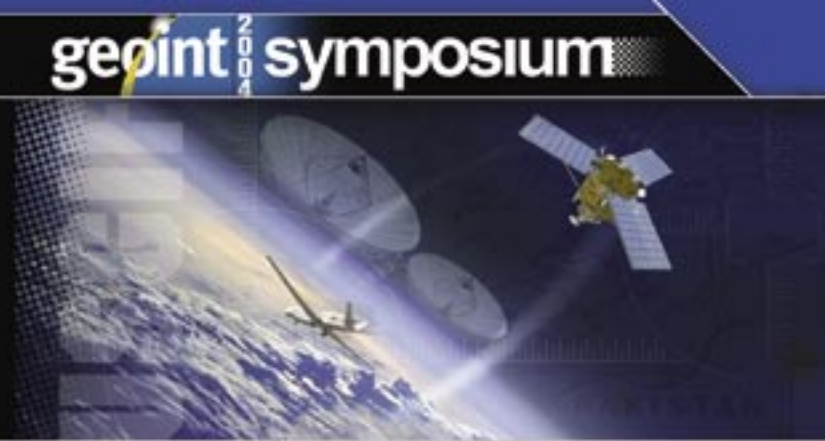
What he does know, however, is that he called an agency he'd never heard of before, got what he needed when he needed it, and in a user-friendly format. That voice at the end of the phone now knows that someone at a big intelligence agency in the Washington, D.C., area has got his back, and that's good enough for him.

## About the Author

Tom Cooke, a retired Army intelligence officer and strategic analyst in U.S. and NATO commands, currently is the Deputy Chief, Support Division, Office of Deployed and Externally Assigned Personnel. He also served as an XVIII Airborne Corps plans officer during Operation Desert Storm.



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